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NOTES ON GEOGRAPHIC DISTRIBUTION

New records of the snake *Leptophis diplotropis* (Günther, 1872) (Squamata: Colubridae) from Hidalgo State, México

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ABSTRACT: We report three new records of the snake *Leptophis diplotropis* from the southeastern and northern regions of Hidalgo State, México. These records represent the first observations of this species in the state of Hidalgo, and represent a range extension of 122.7 km north from the nearest record in Tochimilco, Puebla, México. These new records of *L. diplotropis* represent the best knowledge of its distribution in the Sierra Madre Oriental.

Diversity of snakes from Hidalgo State consists of 78 species (Ramírez-Bautista *et al*., 2010). However, very little information exists on natural history and distribution of these species. New records can fill in important gaps in our understanding of local, regional and national species diversity, which is essential for the effective application of local, regional and national conservation strategies for faunal protection (Ramírez-Bautista *et al*., 2010).

Leptophis is a colubrid genus containing seven species that occur in humid forests of México and Central America (Wilson and Johnson 2010). Primarily, all seven species are arboreal; and feed primarily on frogs, lizards, snakes and bird eggs (Lee 1996; Savage 2002; Köhler 2008; Canseco-Márquez and Gutiérrez-Mayén 2010; Dixon and Lemos-Espinal 2010; McCranie 2011). Reproduction in these oviparous snakes occurs during the rainy season. *Leptophis diplotropis* is endemic to México, and has been designated as a threatened species (NOM-059-2010; SEMARNAT, 2010). This species ranges from Sonora to the Isthmus of Tehuantepec in Oaxaca along the Pacific slopes (Smith and Taylor 1966; Vargas-Santamaría and Flores-Villela 2006), and into several central states, including Morelos and Puebla (Castro-Franco and Bustos-Zagal 2006; García-Vázquez *et al*. 2006; Canseco-Márquez and Gutiérrez-Mayén 2010; Figure 1). Given the known wide range of this species, and the occurrence of seemingly appropriate habitat in areas where it has not been documented, we expect *L. diplotropis* to be more broadly distributed than is currently understood.

On 27 February 2011 at 11:33 h we observed an adult male *Leptophis diplotropis* at Río Blanco, municipality of Huehuetla, Hidalgo (20°24'00" N, 98°05'00" W, WGS-84, 577 m elevation; Figure 1, locality A). The specimen was active, foraging near the river, where its amphibian prey would be expected to occur. Habitat was tropical rain forest (Rzedowski 1978; Figure 2A). The specimen was measured (SVL = 522 mm; tail length [TL] = 400 mm), photographed (Figure 3A) and released in the same place. Huehuetla is 122 km north of the nearest reported location at San Francisco Huilango, municipality of Tochimilco (18°50' N, 98°34' W, 1870 m elevation; Figure 1, locality C), in western Puebla State (Canseco-Márquez *et al*. 2000).

On 22 October 2011, from 10:00 – 14:00 h, we found a young male (CIB-4185) and an adult female (CIB-4186) of *L. diplotropis* dead on a road at Chilijapa, municipality of Tepehuacán de Guerrero (20°00'59" N, 98°52'10" W, WGS-84, 1353 m elevation; Figure 1, locality B). The vegetation type was cloud forest (Rzedowski, 1978; Figure 2B). The young male measured 463 mm SVL and 296 mm TL (Figure 3B), and the adult female 693 mm and 290 mm, respectively. The female was gravid with five eggs (3662. 1 mm^3). The specimens have strongly keeled paravertebral scales, nine infralabials, seven supralabials, and 172 ventral scales in the male and 166 in the female. These new records represent a range extension of 93.3 km NW from Huehuetla to Tepehuacán de Guerrero, and 236.9 km from Tepehuacán de Guerrero from the closest previously known record in the municipality of Tochimilco, Puebla (Figure 1, locality C).

The specimens were collected under permit number SGPA/DGVS/02726/10, issued by SEMARNAT (Secretary for Environment Protection Management), and deposited in the herpetological collections of the Centro de Investigaciones Biológicas CIB, Universidad Autónoma del Estado de Hidalgo under the labels CIB-4185 and CIB-4186.

These are the first records of *Leptophis diplotropis* for the state of Hidalgo, bringing the number of snake species in the state to 79. New records provide crucial information on the distribution of any species and can provide direction for focusing of conservation efforts. Much of the tropical habitat where this species occurs has been modified for agriculture, and many snakes are killed by vehicle traffic. However many of these areas still support diverse communities of amphibians (*e.g*. *Craugastor*

spp.) and reptiles (*Anolis* spp.). *Leptophis diplotropis*, an important predator of small frogs and lizards, requires habitat that supports healthy amphibian and reptile communities (Mathies 2011), and is presently protected by the Government of México. Unfortunately, conservation laws are often poorly enforced, making it more difficult to protect regional herpetofaunal species diversity (Werler and Dixon, 2000). The creation of new areas for the protection of flora and wildlife is encouraged, along with better enforcement of existing wildlife laws. The diversity of amphibians and reptiles in Hidalgo State is especially high (Ramírez-Bautista *et al*., 2010), in large part due to its substantial ecological complexity. It is important to take measures to conserve appropriate habitat to help in the long-term conservation and protection of amphibians and reptiles in this state.

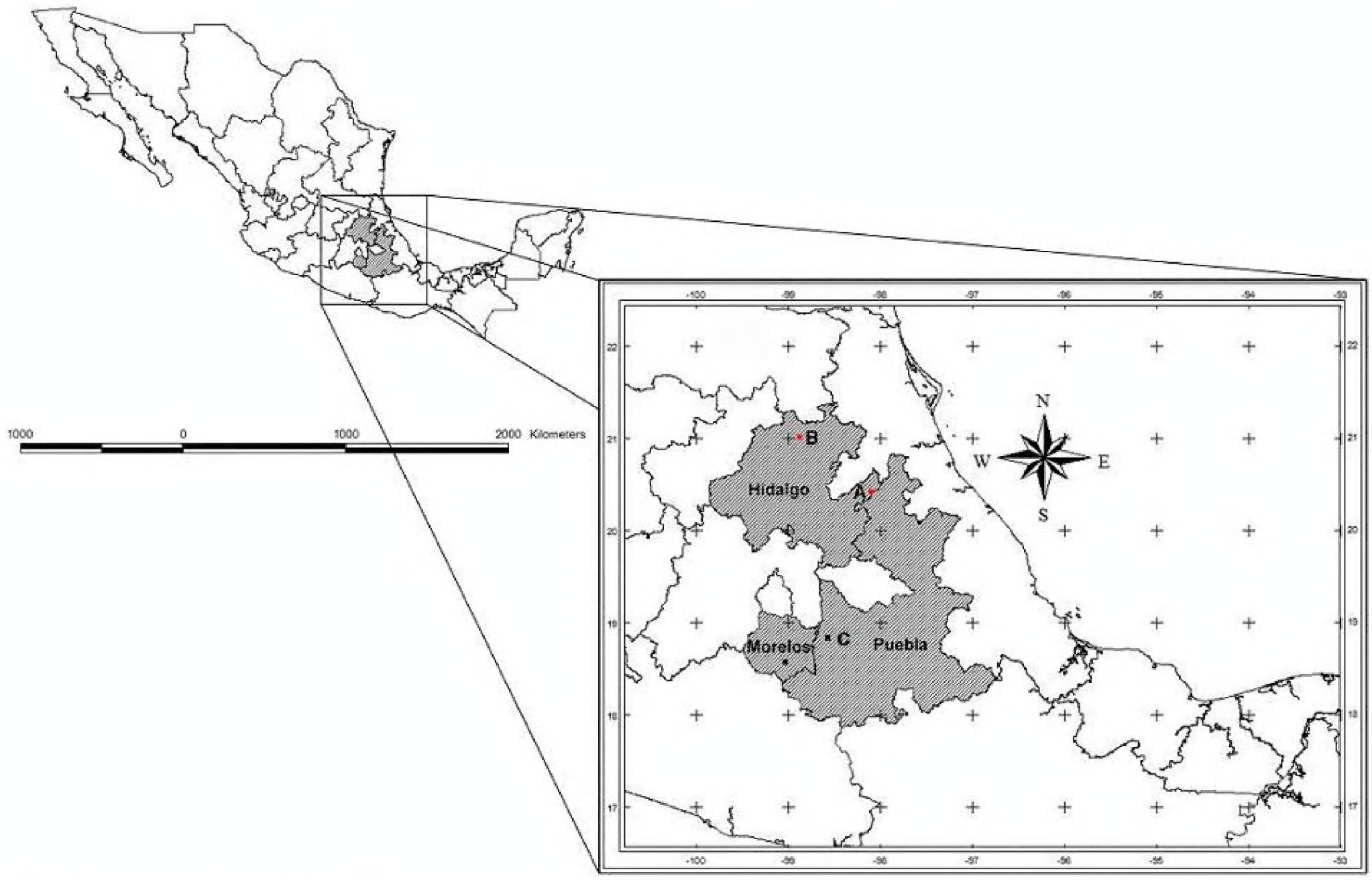

Figure 1. New records of *Leptophis diplotropis* in Hidalgo State. A = Huehuetla, B = Tepehuacán de Guerrero, and C = the nearest previously documented record in Puebla, and there is also a record from Morelos State.

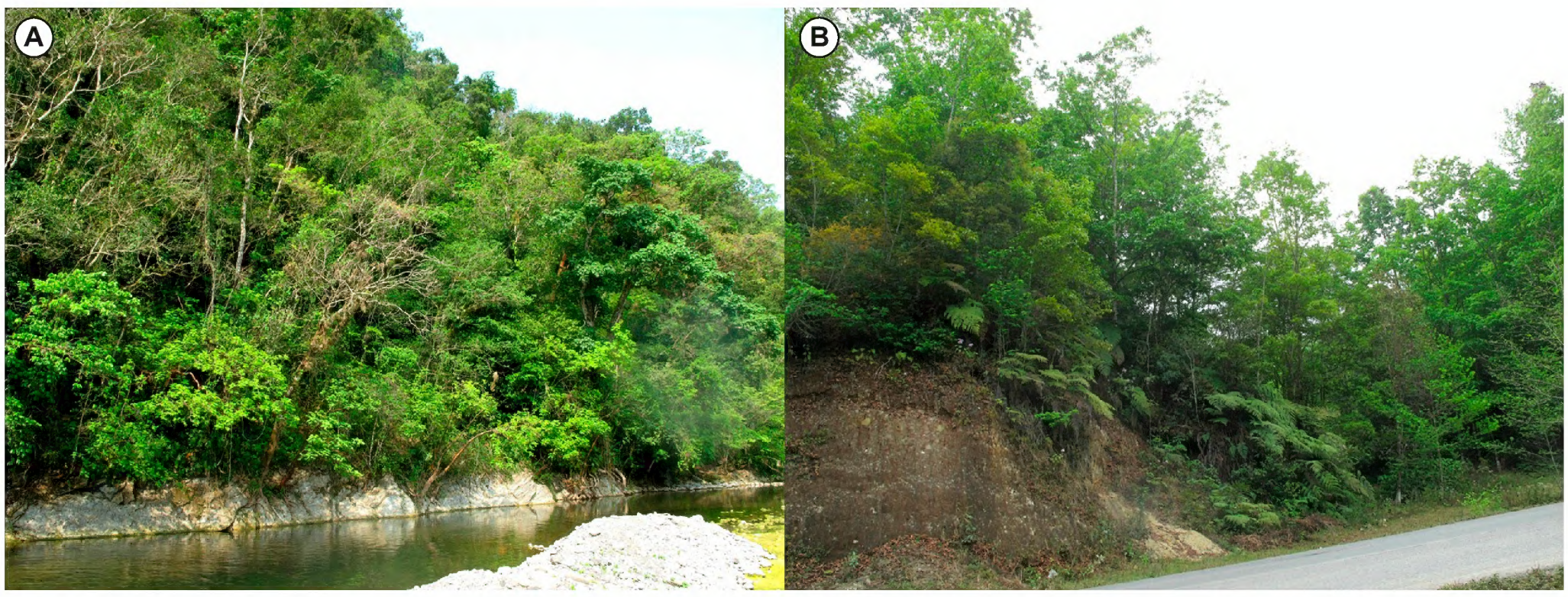

Figure 2. Representative habitats corresponding to new records of *Leptophis diplotropis* in Hidalgo. (A) Tropical rainforest in the municipality of Huehuetla; (B) Cloud forest in the municipality of Tepehuacán de Guerrero. Photos by Christian Berriozabal Islas.

Figure 3. (A) Adult male *Leptophis diplotropis* from the municipality of Huehuetla, Hidalgo. (B) Young male *L. diplotropis* (CIB-4185), found dead on road in the municipality of Tepehuacán de Guerrero, Hidalgo. Photos by Christian Berriozabal Islas.

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